

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: IV (New)	Term	: Second	Academic Year	: 2023-24
Course No.	: ENGG 243	Title	: Renewable Energy and Green Technology		
Credits	: 2 (1+1)				
Day & Date	: Wednesday, 24.04.2024	Time	: 9:00 to 11:00 hrs.	Total Marks	: 40

- Note :**
1. Solve ANY EIGHT questions from SECTION 'A'.
 2. All questions from SECTION 'B' are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagram wherever necessary.

SECTION 'A'

- Q.1 Enlist various forms of energy. Give the advantages and disadvantages of solar energy and wind energy.
- Q.2 Describe in short the applications of biomass. Give the environmental benefits of biodiesel.
- Q.3 Describe in short KVIC biogas plant. Give the advantages and disadvantages of KVIC biogas plant.
- Q.4 Enlist different types of gasifiers. Describe updraft gasifier in short.
- Q.5 Give detailed classification of solar cookers and enlist applications of the direct solar energy.
- Q.6 What are the advantages of solar water heaters? Describe in short box type of solar cooker.
- Q.7 Give detailed classification of solar dryers.
- Q.8 What are the merits of solar photovoltaic system? Describe in short the working of photovoltaic cells.
- Q.9 What are the uses of wind energy systems?
- Q.10 Write short notes on (Any Two):
- a) Operation of simple solar still b) Ocean thermal energy conversion c) Fuel cells

SECTION 'B'

- Q.11 Define the following terms:
- 1) Solar pond 2) Gasification 3) Bio-energy 4) Chemical energy
- Q.12 Fill in the blanks:
- 1) About _____% of India's energy generation capacity is from fossil fuels.
- 2) For solar water heater collector, the required collector area for 100 liter hot water demand at 50°C is about _____ m².
- 3) In wind energy conversion system, the horizontal axis machines are those in which the axis of rotation is _____ to the direction of wind.
- 4) Biogas contains _____ per cent of Methane.

